IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No. : 10/074,191 Confirmation No. 4463
Appellant : John A. Szymbor et al.
Filed : February 12, 2002
TC/A.U. : 3676
Examiner : Enoch E. Peavey

Docket No. : EH-10586(05-190)
Customer No. : 52237

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

APPEAL BRIEF

Sir:

This is an appeal to the Board of Patent Appeals and Interferences from the final rejection of claims 1 - 21, 24 - 30, and 32 - 42, dated August 11, 2004, made by the Primary Examiner in Group Art Unit 3676.

REAL PARTY IN INTEREST

The real party in interest is United Technologies Corporation of Hartford, Connecticut.

RELATED APPEALS AND INTERFERENCES

There are no other prior and pending appeals, interferences or judicial proceedings known to Appellants, Appellants' legal representative, or Assignee which may be related to, directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Claims 1 - 30 and 32 - 42 are pending in the application. Claim 31 has been cancelled. Claims 1 - 21, 24 - 30, and 32 - 42 stand finally rejected, and are on appeal. A copy of these claims is set forth in the Claims Appendix attached hereto. Claims 22 and 23 stand objected to.

STATUS OF AMENDMENTS

No amendment was filed subsequent to the final rejection. However, an amendment canceling claims 22 and 23 is appended hereto. Appellants are filing a divisional application which contains claims 22 and 23.

SUMMARY OF CLAIMED SUBJECT MATTER

Claims 1 - 11 and 32 - 42 relate to a bristle arrangement (200) for subsequent use in a brush seal. The bristle arrangement (200) consists essentially of a plurality of bristles (201) arranged in a length, and a joint (203) securing the plurality of bristles together. (See FIGS. 3a and 3b and page 8, paragraph 0044 of the specification.) The joint extends along the length of the bristles (see paragraph 0046 on page 8 of the specification) and is preferably continuous. The joint (203) is a weld joint. The bristles (201) each have opposed ends and the joint (203) is located at one of the opposed ends. The bristles (201) are preferably metallic (see page 8, paragraph 0044 of the specification) and may be grouped in tufts with the joint securing the tufts together.

The bristle arrangement is subsequently combined with plates (501, 503, 505)(see FIG. 9a) to form a brush seal. A plurality of bristle arrangements may be combined with a plurality of plates to form a multiple stage brush seal.

The length of the bristles (201) may define an arc such as a circle. (See FIGS. 3a and 3b and paragraph 0046 of the specification.) The arc has an outer diameter and an inner diameter. The joint is located at the outer diameter or the inner diameter.

Claims 12 - 21 are directed to a method of making a bristle arrangement for subsequent use in a brush seal. The method comprises the steps of arranging a plurality of bristles (201, 321)(see page 12, paragraph 0063) along a length and joining essentially just said bristles along the length (see page 12, paragraph 0066). Preferably, the joining step comprises welding (See page 11 of the specification, paragraph 0060). The joining step occurs at an end of the bristles such as an outer diameter or an inner diameter of an arcuate arrangement of the bristles. The joining step creates a continuous joint along the arc. (see page 13, paragraph 0067.)

The arranging step comprises separating the plurality of bristles (325) into groups (see FIG. 6), joining the plurality of bristles within the groups to create tufts (321), and arranging the tufts along the length. (See paragraph 52 on page 10 of the specification).

The method further comprises securing the bristle arrangements between plates (501, 503, 505) to form a brush seal (see FIGS. 9a and 9b and pages 12 - 13, paragraphs 0068 - 0074 of the specification).

Claims 24 - 30 are directed to a method of making a brush seal (500) having multiple stages (see FIGS. 9a and 9b) comprising the steps of providing discrete plates (501, 503, 505) and discrete bristle arrangements (200), creating a stack of the discrete plates and discrete bristle arrangements to define the multiple stages of the brush seal, and joining the

stack to create the brush seal. (See pages 13 - 14, paragraphs 0068 - 0074, of the specification.)

The bristle arrangement includes a plurality of bristles (200) arranged along a length; and a joint extending along the length and securing the plurality of bristles together (see FIG. 9a). The plurality of bristles may be arranged in an arc and the joint extends along the arc. The arc may be a circle. The joint extends continuously along the length. The joining step comprises welding. The plates may include a windage cover (505). (See paragraph 0071 of the specification and FIG. 9a.)

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are as follows:

(1) The rejection of claims 1 - 4 and 7 - 21 under 45 U.S.C. 102(a) as being anticipated by U.S. Patent No. 6,536,773 to Datta; and

(2) The rejection of claims 1 - 10, 12 - 20, 24 - 30, and 32 - 42 on anticipation grounds over U.S. Patent No. 5,106,104 to Atkinson et al.

ARGUMENT

(a) Patentability of Claims

1 - 4 and 7 - 21

Over Datta

Claims 1 - 4 and 7 - 21 have been rejected as being anticipated by U.S. Patent No. 6,536,773 to Datta.

Independent claims 1 and 12 use the partially closed language "comprises essentially of" (claim 1) and "essentially just" (claim 12). Such partially closed language "limits the

scope of a claim to the specified elements "and those that do not materially affect the basic and novel characteristic(s)' of the claimed invention." M.P.E.P. § 2111.03 (citing *In re Herz*, 537 F.2d 549, 551 - 52, 190 USPQ 461, 463 (CCPA 1976)(emphasis in original). The Examiner believes that the presence of the rails does not materially affect the basic and novel characteristics of the claimed invention. Appellants disagree.

Paragraph 8 of the specification in the instant application states one object of the present invention - to provide a brush seal "made from fewer components". Once the plates and bristle assemblies are stacked, as described in paragraph 73 of the specification, the components are preferably fusion welded together. At that point, the side plate and back plate provide structural support to the bristles. The inclusion of "supports" such as the rings of Datta would be unnecessary for the present invention. Recall, as stated in paragraph 67 of the specification, the purpose of the joint is to allow the operator to manipulate the bristle assembly before assembly of the brush seal. The purpose of the rings in Datta is structural support (see e.g. Figure 4). Therefore, considering the inclusion of rings as not affecting the basic and novel characteristics of the claimed invention was improper.

(b) Patentability of Claims
1 - 10, 12 - 20, 24 - 30 and
32 - 42 Over Atkinson

Independent claims 1 and 12 recite that the claimed bristle arrangement is "for subsequent use in a brush seal." The Examiner believes such phrase is a statement of intended use. Regardless, however, the Examiner must still evaluate such

language "to determine whether the recited purpose or intended use results in a structural difference … between the claimed invention and the prior art." M.P.E.P. § 2111.02.

In performing this evaluation, Applicants believe that the Examiner overlooked the term "subsequent" in the phrase. The term "subsequent" define when, in the build-up, the bristle arrangement includes those features. Specifically, the bristle arrangement includes those features before assembly of the brush seal. Atkinson does not show all of the recited features before build-up of the brush seal. Accordingly, such phrase results in a structural difference between the claimed invention and the prior art.

Claim 24 is allowable because there is no disclosure in Atkinson of the claimed method steps. While Atkinson describes a brush seal having multiple stages, there is no detailed description of how the multiple stage brush seal is formed. Thus, in Appellants' opinion, there is no disclosure of the discrete plates and discrete bristle arrangement providing step, the stack creating step, and, in particular, the joining step of claim 24. Certainly, there is no disclosure in Atkinson of joining the stack by welding. There is also no disclosure in Atkinson of including a windage cover in the plates.

Claims 32 - 42 follow claims 1 - 11, except that independent claim 32 uses the closed language "consists of". Claims 32 - 42 are believed to be allowable over the Atkinson reference for the same reasons that claim 1 is allowable.

CONCLUSION

For the foregoing reasons, the Board is hereby requested to reverse the rejections of claims 1 - 21, 24 - 30, and 32 - 42

and remand the application to the Primary Examiner for allowance and issuance.

FEES

The Director is hereby authorized to charge the Appeal Brief fee of $500.00 to Deposit Account No. 21-0279. Should the Director determine that an additional fee is due, he is hereby authorized to charge said fee to said Deposit Account.

Respectfully submitted,

John A. Szymbor et al.

By _____

Barry L. Kelmachter
BACHMAN & LaPOINTE, P.C.
Reg. No. 29,999
Attorney for Appellants

Telephone: (203)777-6628 ext. 112
Telefax: (203)865-0297
Email: docket@bachlap.com

IN TRIPLICATE

Date: April 4, 2005

I, Nicole Motzer, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on **April 4, 2005**.

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APPENDIX - CLAIMS ON APPEAL

1. A bristle arrangement for subsequent use in a brush seal, the bristle arrangement consisting essentially of:

a plurality of bristles arranged in a length; and

a joint securing said plurality of bristles together;

wherein said joint extends along said length.

2. The bristle arrangement as recited in claim 1, wherein said joint is a weld joint.

3. The bristle arrangement as recited in claim 1, wherein said bristles each have opposed ends, and said joint is located at one of said opposed ends.

4. The bristle arrangement as recited in claim 1, wherein said plurality of bristles are metallic.

5. The bristle arrangement as recited in claim 1, wherein the bristle arrangement is subsequently combined with plates to form a brush seal.

6. The bristle arrangement as recited in claim 5, wherein a plurality of the bristle arrangements are subsequently combined with a plurality of said plates to form a multiple stage brush seal.

7. The bristle arrangement as recited in claim 1, wherein said length defines an arc.

8. The bristle arrangement as recited in claim 7, wherein said arc is a circle.

9. The bristle arrangement as recited in claim 7, wherein said arc has an outer diameter and an inner diameter, and said joint is located at said outer diameter or said inner diameter.

10. The bristle arrangement as recited in claim 1, wherein said joint is continuous.

11. The bristle arrangement as recited in claim 1, wherein said plurality of bristles are grouped in tufts, said joint securing said tufts together.

12. A method of making a bristle arrangement for subsequent use in a brush seal, comprising the steps of:

arranging a plurality of bristles along a length; and

joining essentially just said plurality of bristles along said length.

13. The method as recited in claim 12, wherein the joining step comprises welding.

14. The method as recited in claim 12, wherein the joining step occurs at an end of said bristles.

15. The method as recited in claim 12, wherein said plurality of bristles are metallic.

16. The method as recited in claim 12, further comprising the step of securing the bristle arrangement between plates to form a brush seal.

17. The method as recited in claim 12, wherein said length comprises an arc.

18. The method as recited in claim 17, wherein said arc is a circle.

19. The method as recited in claim 17, wherein the joining step occurs at an outer diameter or an inner diameter of said arc.

20. The method as recited in claim 17, wherein the joining step creates a continuous joint along said arc.

21. The method as recited in claim 12, wherein the arranging step comprises the steps of:

separating said plurality of bristles into groups;

joining said plurality of bristles within said groups to create tufts; and

arranging said tufts along said length.

22. The method as recited in claim 12, wherein the arranging and joining steps use an apparatus comprising:

a base having a surface with an arrangement of guides thereon, said guides adapted to orient said bristles on said surface for the arranging step; and

a cover having a surface for receiving said bristles;

wherein said cover removably mounts to said base to sandwich said bristles between said base and said cover for the joining step.

23. The method as recited in claim 22, wherein said apparatus further comprises a shuttle, said shuttle removably receiving said base and having an arrangement of guides thereon corresponding to said guides on said base for orienting said bristles in the arranging step.

24. A method of making a brush seal having multiple stages, comprising the steps of:

providing discrete plates and discrete bristle arrangements;

creating a stack of said discrete plates and discrete bristle arrangements to define said multiple stages of said brush seal; and

joining said stack to create said brush seal.

25. The method as recited in claim 24, wherein said bristle arrangement includes:

a plurality of bristles arranged along a length; and

a joint extending along said length and securing said plurality of bristles together.

26. The method as recited in claim 25, wherein said plurality of bristles are arranged in an arc, and said joint extends along said arc.

27. The method as recited in claim 26, wherein said arc is a circle.

28. The method as recited in claim 25, wherein said joint extends continuously along said length.

29. The method as recited in claim 24, wherein the joining step comprises welding.

30. The method as recited in claim 29, wherein said plates include a windage cover.

32. A bristle arrangement for subsequent use in a brush seal, the bristle arrangement comprising a plurality of bristles arranged in a length and held together, wherein a feature holding said plurality of bristles together consists of a joint extending along said length.

33. The bristle arrangement as recited in claim 32, wherein said joint is a weld joint.

34. The bristle arrangement as recited in claim 32, wherein said bristles each have opposed ends, and said joint is located at one of said opposed ends.

35. The bristle arrangement as recited in claim 32, wherein said plurality of bristles are metallic.

36. The bristle arrangement as recited in claim 32, wherein the bristle arrangement is subsequently combined with plates to form a brush seal.

37. The bristle arrangement as recited in claim 36, wherein a plurality of the bristle arrangements are subsequently combined with a plurality of said plates to form a multiple stage brush seal.

38. The bristle arrangement as recited in claim 32, wherein said length defines an arc.

39. The bristle arrangement as recited in claim 38, wherein said arc is a circle.

40. The bristle arrangement as recited in claim 39, wherein said arc has an outer diameter and an inner diameter, and said joint is located at said outer diameter or said inner diameter.

41. The bristle arrangement as recited in claim 32, wherein said joint is continuous.

42. The bristle arrangement as recited in claim 32, wherein said plurality of bristles are grouped in tufts, said joint securing said tufts together.